HHS SBIR RFA-EB-14-001

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Topic Number:
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Description:
Purpose

The purpose of this funding opportunity is to reduce health disparities through the development and translation of appropriate medical technologies. The NIH defines health disparities as differences in the incidence, prevalence, morbidity, mortality, and burden of diseases and other adverse health outcomes that exist among specific population groups. These population groups include racial and ethnic minorities (African Americans, American Indians, Alaska Natives, Asian Americans, Hispanic Americans, Native Hawaiians, and other U.S. Pacific Islanders, subpopulations of all of these racial/ethnic groups), socioeconomically disadvantaged individuals, and medically underserved populations including individuals residing in rural and urban areas. Appropriate medical technologies must have the following basic characteristics: effective, affordable, culturally acceptable, and easily accessible to those who need them. Responsive grant applications must involve a formal collaboration with a healthcare provider or other healthcare organization serving one or more health disparity populations during Phase I and Phase II. This announcement supports applications to develop medical devices, imaging systems, and other technologies that adequately address the healthcare needs of health disparity populations. It is expected that responsive grant applications will result in advances in medical technologies that will be invaluable in reducing health disparities within and across the priority areas of cardiovascular disease, stroke, cancer, diabetes, HIV/AIDS, infant mortality, mental health, and obesity, as well as lung, liver, and kidney diseases, psoriasis, scleroderma, and other diseases, illnesses, and conditions of public health importance.

Background

Medical and scientific advances have introduced new opportunities for the continued improvement of health for all Americans. However, in spite of notable improvements gained as a result of the technological advancement, there continues to be an alarming disproportionate burden of illness among minority and other health disparity populations. Overcoming persistent disparities in healthcare access and health outcomes remains a foremost challenge. To meet this challenge, the NIH is committed to supporting a wide range of research, aimed at the development of innovative diagnostics, treatments, and preventative strategies to reduce, and eventually eliminate, health disparities.

Research Objectives and Scope

The primary objective of this funding opportunity is to support the translation of medical technologies, new or existing, that can have a significant impact on healthcare access and health outcomes for health disparity populations. Small business concerns (SBCs) are invited to submit grant applications proposing to develop and deliver appropriate technologies to health disparity populations. Responsive grant applications must involve a formal collaboration with a healthcare provider or other healthcare organization serving one or more health disparity populations during Phase I and Phase II. A requisite component of the research plan is a description of the healthcare requirements and needs of the population and the existing barriers to adequate healthcare delivery. Several of these barriers have been identified and are described below. Applications submitted to this funding opportunity must address one or more of these barriers in developing technologies that will impact health disparities:

- Physical Barriers—factors such as proximity to healthcare facilities and transportation may limit access to healthcare
- Knowledge Barriers—health literacy and language barriers can inhibit healthcare delivery, as well as a lack of patient information for the healthcare provider
- Infrastructure Barriers—rural hospitals and community health centers may not have the same resources and expertise of large hospitals, and may not be able to afford advanced medical technologies
- Economic Barriers—lack of insurance coverage or financial resources may also contribute to disparities in healthcare access
- Cultural Barriers—religious beliefs and social customs often deter certain populations from seeking healthcare

Appropriate technologies may be new and innovative, or they may be existing technologies that have been redesigned based on the needs of a specific health disparity population. Appropriate technologies have been defined as effective, affordable, culturally acceptable, and deliverable to those who need them. To be effective, a technology must provide an improvement over the current quality of care for a health disparity population by overcoming one or more of the barriers. The technology must also be low-cost, so as to be affordable to the local hospital, community health center, primary care physician, or individual patient in need. For a medical technology to be adopted by a health disparity population, the technology development must be amenable to the population’s cultural beliefs and social customs. Acceptance of the technology by the population is critical to the successful delivery of quality healthcare. To be physically delivered to those in need, a technology must be developed within the specifications of the operating environment of the end-user. The technology must be able to function given the existing resources and expertise within health disparity populations. Keeping in mind the barriers that contribute to health disparities, a non-inclusive list of appropriate medical technologies that might achieve the objectives of this initiative may be found below:

- Telehealth technologies for remote diagnosis and monitoring
- Sensors for point-of-care diagnosis
- Devices for in-home monitoring
- Mobile, portable diagnostic and therapeutic systems
- Devices which integrate diagnosis and treatment

- Diagnostics or treatments that do not require special training
- Devices that can operate in low-resource environments
- Non-invasive technologies for diagnosis and treatment
- Integrated, automated system to assess or monitor a specific condition
- Some examples include, but are not limited to
- Inexpensive diabetic test strip and/or blood sugar monitoring.
- Use of currently available basic technology (e.g. phone lines, televisions with remote controls, cellphones, weight scales, diabetic glucometers, thermometers) within underserved settings to promote self-management and patient education, increase patient-clinician communication and surveillance of chronic disease conditions.
- Telemedicine to improve access to specialty care which would normally not be accessible because of high cost and transportation.
- Improved early detection (via saliva testing, breath testing, blood testing) of diseases where there are significant health disparities.
- Low-cost portable imaging for prevention and early detection of conditions where there are significant health disparities (e.g. breast cancer screening and portable retinal imaging).